Next Generation Sequencing and Genome Assembly–Spring 2020

CS 286-01: Advanced Topics Course
(Next Generation Sequencing and Genome Assembly)
Tue & Thur 6:00-7:15PM Room MH 222

COURSE TOPICS

• Introduction to
  ✓ The history and state of the art in NGS (Next Generation Sequencing) technologies and methods.
  ✓ Public sequence databases
  ✓ Genome assembly and annotation
  ✓ NGS in Medicine: Clinical vs Research sequencing

• NGS technologies and vendors that will be covered include Maxam-Gilbert, Sanger, Oxford nanopore, Pac-Bio, Illumina, 454, ionTorrent, and Capillary-based sequencing.

• De novo and reference genome assembly will be covered including assembly techniques that use generalized De Bruijn graphs.

• Students will have an opportunity to have a portion of their own genome sequenced and to assemble it themselves.

• After completing the course, students will have a sound understanding of key NGS technologies, genome assembly, and annotation methods.

WHO SHOULD EnROLL?
Anyone who wants a solid introduction to NGS technologies and methods, along with applications in diagnostics and clinical medicine.

HOW TO ENROLL

Current SJSU Students – Log in to your MySJSU account to search for the course number and section printed above.

Others – Go to the SJSU Open University web page (http://ou.sjsu.edu) and click on the link:
  How to Register for an On-Site Class.

NOTE: Open Univ. Spring 2020 courses will be visible at the above URL likely by December 2019.

PREREQUISITES

• Any basic molecular cell biology course.

• Being comfortable with running bioinformatics software on Macs, Windows, or UNIX platforms.

• Instructor consent.

PROPOSED TEXTBOOK

Supplemental reference material will be provided.